CLAIMS

1. A high-molecular weight aliphatic polyester, whose molecular weight has been highly increased by a chain-lengthening reaction of a ring-opening (co)polymer of at least one cyclic ester selected from the group consisting of glycolide and lactide with an oxazoline compound to the extent that a rate of increase in molecular weight represented by a ratio (Mw_2/Mw_1) of a weight average molecular weight (Mw_2) of a ring-opening (co)polymer after the chain lengthening to a weight average molecular weight (Mw_1) of the ring-opening (co)polymer before the chain lengthening amounts to at least 1.10.

2. The high-molecular weight aliphatic polyester according to claim 1, wherein the molecular weight is highly increased to the extent that the rate of increase in molecular weight amounts to at least 1.20.

3. The high-molecular weight aliphatic polyester according to claim 1, wherein the molecular weight is highly increased to the extent that the rate of increase in molecular weight amounts to at least 1.35.

4. The high-molecular weight aliphatic polyester according to claim 1, wherein the weight average molecular weight (Mw) of the ring-opening (co)polymer, whose

molecular weight has been increased by the chain-lengthening reaction, is at least 120,000.

5. The high-molecular weight aliphatic polyester according to claim 1, wherein the ring-opening (co)polymer having a weight average molecular weight of at most 110,000 before the chain lengthening is subjected to the chain-lengthening reaction into a high-molecular weight ring-opening (co)polymer having a weight average molecular weight of at least 150,000.

6. The high-molecular weight aliphatic polyester according to claim 1, wherein a difference ($T_2 - T_1$) between a 1%-weight loss-starting temperature T_2 on heating of the ring-opening (co)polymer after the chain lengthening and a 1%-weight loss-starting temperature T_1 on heating of the ring-opening (co)polymer before the chain lengthening is at least 3°C.

7. The high-molecular weight aliphatic polyester according to claim 6, wherein the 1%-weight loss-starting temperature T_2 on heating of the ring-opening (co)polymer after the chain lengthening is at least 233°C.

8. The high-molecular weight aliphatic polyester according to claim 1, wherein a molecular weight distribution (Mw/Mn) represented by a ratio of a weight

average molecular weight (Mw) of the ring-opening (co)polymer, whose molecular weight has been highly increased by the chain-lengthening reaction, to a number average molecular weight (Mn) thereof is at least 1.90.

9. The high-molecular weight aliphatic polyester according to claim 1, wherein the oxazoline compound is an oxazoline compound having at least two oxazoline ring structures in its molecule.

10. The high-molecular weight aliphatic polyester according to claim 9, wherein the oxazoline compound having at least two oxazoline ring structures in its molecule is 2,2'-m-phenylene-bis(2-oxazoline).

11. A process for producing a high-molecular weight aliphatic polyester, which comprises subjecting a ring-opening (co)polymer of at least one cyclic ester selected from the group consisting of glycolide and lactide to a chain-lengthening reaction with an oxazoline compound to highly increase the molecular weight thereof to the extent that a rate of increase in molecular weight represented by a ratio (Mw_2/Mw_1) of a weight average molecular weight (Mw_2) of a ring-opening (co)polymer after the chain lengthening to a weight average molecular weight (Mw_1) of the ring-opening (co)polymer before the chain lengthening amounts to at least 1.10.

12. The production process according to claim 11, wherein the molecular weight is highly increased to the extent that the rate of increase in molecular weight amounts to at least 1.20.

13. The production process according to claim 11, wherein the molecular weight is highly increased to the extent that the rate of increase in molecular weight amounts to at least 1.35.

14. The production process according to claim 11, wherein the ring-opening (co)polymer and the oxazoline compound are subjected to the chain-lengthening reaction at a temperature within a range of 100 to 300°C.

15. The production process according to claim 11, wherein the ring-opening (co)polymer and the oxazoline compound are subjected to the chain-lengthening reaction under conditions that the reaction temperature is not lower than the melting temperature of the ring-opening (co)polymer, but not higher than 300°C, and the reaction time is 5 to 40 minutes.

16. The production process according to claim 11, wherein the oxazoline compound is an oxazoline compound having at least two oxazoline ring structures in its molecule.

17. The production process according to claim 11, wherein the chain-lengthening reaction is conducted in the presence of the oxazoline compound in a proportion within a range of 0.005 to 10 parts by weight per 100 parts by weight of the ring-opening (co)polymer.

18. The production process according to claim 11, wherein the ring-opening (co)polymer having a weight average molecular weight of at most 110,000 before the chain lengthening is subjected to the chain-lengthening reaction into a high-molecular weight ring-opening (co)polymer having a weight average molecular weight of at least 150,000.

19. The production process according to claim 11, wherein a difference ($T_2 - T_1$) between a 1%-weight loss-starting temperature T_2 on heating of the ring-opening (co)polymer after the chain lengthening and a 1%-weight loss-starting temperature T_1 on heating of the ring-opening (co)polymer before the chain lengthening is made at least 3°C by the chain-lengthening reaction.

20. The production process according to claim 11, wherein a molecular weight distribution (Mw/Mn) represented by a ratio of a weight average molecular weight (Mw) of the ring-opening (co)polymer, whose molecular weight has been

highly increased by the chain-lengthening reaction, to a number average molecular weight (Mn) thereof is at least 1.90.